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MDSP-P01-001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Moran et al.

Serial No.: 09/897,787

Group Art Unit: 1645

Filed: June 29, 2001

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Title: GRF2 BINDING PROTEINS AND
APPLICATIONS THEREOF

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INFORMATION DISCLOSURE STATEMENT UNDER 37C.F.R 1.97(b)

Submitted herewith on Form PTO-1449 is a list of documents known to Applicants, their Agent and/or Attorney in compliance with the requirements of 37 C.F.R. 1.56. A copy of each document listed is also being submitted herewith.

This Information Disclosure Statement is being filed before the mailing of the first office action on the merits; therefore, no fee is due.

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Applicants respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached Form PTO-1449.

This submission does not represent that a search has been made or that no better art exists. Nor does it constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and applicants determine that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there are any fees due in connection with the filing of this Statement, please charge the fees to our **Deposit Account, No. 18-1945.**

Respectfully submitted,
Ropes & Gray

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Form PTO-1449 INFORMATION DISCLOSURE CITATION IN AN APPLICATION <i>(Use several sheets if necessary)</i>			Docket Number (Optional) MDSP-P01-001	Application Number 09/897,787			
			Applicant Moran et al.	JAN 31 2002 FEB 04 2002			
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLAS	Translation	
						YES	NO
OTHER DOCUMENTS <i>(Including Author, Title, Date, Pertinent Pages Etc.)</i>							
AA	Aebersold, 1993, "Mass spectrometry of proteins and peptides in biotechnology", Curr. Opin. Biotechnol. 4:412-419						
AB	Anborgh et al., 1999, "Ras-specific exchange factor GRF: oligomerization through its Dbl homology domain and calcium-dependent activation of Raf", Mol. Cell. Biol. 19:4611-4622						
AC	Arnott et al., 1993, "Mass spectrometry of proteins and peptides: sensitive and accurate mass measurement and sequence analysis", Clin. Chem. 39:2005-2010						
AD	Bos, 1998, "All in the family? New insights and questions regarding interconnectivity of Ras, Rap1 and Ral", Embo J. 17:6776-6782						
AE	Buday and Downward, 1993, "Epidermal growth factor regulates p21 ^{Ras} through the formation of a complex of receptor, Grb2 adaptor protein, and SOS nucleotide exchange factor", Cell 73:611-620						
AF	Cen et al., 1992, "Isolation of multiple mouse cDNAs with coding homology to Saccharomyces cerevisiae CDC25: identification of a region related to Bcr, Vav, Dbl and CDC24", EMBO J. 11:4007-4015						
AG	Cerione and Zheng, 1996, "The Dbl family of oncogenes", Curr. Op. Cell Biol. 8:216-222						
AH	Chardin et al., 1993, "Human sos1 - a guanine nucleotide exchange factor for Ras that binds to grb2", Science 260:1338-1343						
AI	Chen et al., 1993, "A murine CDC25/Ras-GRF-related protein implicated in Ras regulation", Devel. Genet. 14:339-346						
AJ	Clauser et al., 1995, "Rapid mass spectrometric peptide sequencing and mass matching for characterization of human melanoma proteins isolated by two-dimensional PAGE", Proc. Natl. Acad. Sci. USA 92:5072-5076						
AK	Cottrell, 1994, "Protein identification by peptide mass fingerprinting", Pept. Res. 7:115-124						
AL	Dankort et al., 1997, "Distinct tyrosine autophosphorylation sites negatively and positively modulate neu-mediated transformation", Mol. Cell. Biol. 17:5410-5425						
AM	Ebinu et al., 1998, "RasGRP, a Ras guanyl nucleotide- releasing protein with calcium- and diacylglycerol-binding motifs", Science 280:1082-1086						

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	AN	Ellis et al., 1995, "Phosphorylation-dependent complexes of p120-specific GTPase-activating protein with p62 and p190", Methods In Enzymology 255:179-192		
	AO	Eng et al., 1994, "An approach to correlate tandem mass spectral data of peptides with amino acid sequences in a protein database", J. Am. Soc. Mass Spectrom. 5:976-989		
	AP	Fam et al., 1997, "Cloning and Characterization of Ras-GRF2, a novel exchange factor for Ras", Mol. Cell. Biol. 17:1396-1406		
	AQ	Fam et al., 1997, "The Ras-GRF2 gene maps to human chromosome 5 and murine chromosome 13 near the Ras-GAP gene", Genomics 39:118-120		
	AR	Fan et al., 1998, "The exchange factor Ras-GRF2 activates Ras-dependent and Rac-dependent mitogen-activated protein kinase pathways", Curr. Biol. 8:935-938		
	AS	Farnsworth et al., 1995, "Calcium activation of Ras mediated by neuronal exchange factor Ras-GRF", Nature 376:524-527		
	AT	Fenn et al., 1990, "Electrospray ionization: principles and practice", Mass Spectrometry Reviews 9:37		
	AU	Garibaldi et al., 1994, "Genetic mapping of the mouse CDC25Mm gene, a Ras-specific guanine nucleotide-releasing factor, to chromosome 9", Genomics 21:451-453		
	AV	Gilbreth et al., 1998, "Negative regulation of mitosis in fission yeast by the shk1 interacting protein skbl and its human homolog, Skb1Hs", Proc. Natl. Acad. Sci. USA 95:14781-14786		
	AW	Graham et al., 1977, "Characteristics of a human cell line transformed by DNA from human adenovirus type 5", J. Gen. Virol. 36:59-74		
	AX	Hall, 1994, "Small GTP-binding proteins and the regulation of the actin cytoskeleton", Annu. Rev. Cell Biol. 10:31-54		
	AY	Harlow and Lane, 1988, <u>Antibodies: A Laboratory Manual</u> (Cold Spring Harbor, Cold Spring Harbor)		
	AZ	Hillenkamp et al., 1991, "Matrix-assisted laser desorption/ionization mass spectrometry of biopolymers", Anal. Chem. 63:1193A-1203A		
	BA	Krapivinsky et al., 1994, "Molecular characterization of a swelling-induced chloride conductance regulatory protein, pICln", Cell 76:439-448		
	BB	Krapivinsky et al., 1998, "pICln binds to a mammalian homolog of a yeast protein involved in regulation of cell morphology", J. Biol. Chem. 273:10811-10814		
	BC	Lowy and Willumsen, 1993, "Function and regulation of Ras", Ann. Rev. Biochem. 62:851-891		
	BD	Mann and Wilm, 1994, "Error-tolerant identification of peptides in sequence databases by peptide sequence tags", Anal. Chem. 66:4390-4399		

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	BE	McCormick, 1994, "Activators and effectors of Ras p21 proteins", Curr. Opin. Genet. Dev. TECH CENTER 1600/2900		
	BF	Millward et al., 1999, "Ndr protein kinase is regulated by phosphorylation on two conserved sequence motifs", J. Biol. Chem. 274 :33847-33850		
	BG	Moran et al., 1991, "Protein-tyrosine kinases regulate the phosphorylation, protein interactions, and subcellular distribution of p21Ras GTPase activating protein", Mol. Cell. Biol. 11 :1804-1812		
	BH	Nelson et al., 1994, "Mass determination of human immunoglobulin IgM using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry", Rapid Commun. Mass Spectrom. 8 :627-631		
	BI	Ohtsuka et al., 1999, "Nrap GEP: A novel neural GDP/GTP exchange protein for Rap1 small G protein that interacts with Synaptic Scaffolding Molecule (S-SCAM)", Biochem. Biophys. Res. Commun. 265 :38-44		
	BJ	Olson et al., 1995, "An essential role for Rho, Rac, and Cdc42 GTPases in cell cycle progression through G1", Science 269 :1270-1272		
	BK	Papayannopoulos, 1995, "The interpretation of collision-induced dissociation tandem mass spectra of peptides", Mass Spect. Rev. 14 :49-73		
	BL	Pappin, 1997, "Peptide mass fingerprinting using MALDI-TOF mass spectrometry", Methods Mol. Biol. 64 :165-173		
	BM	Patterson and Aebersold, 1995, "Mass spectrometric approaches for the identification of gel-separated proteins", Electrophoresis 16 :1791-1814		
	BN	Patterson et al., 1996, "Application of combined mass spectrometry and partial amino acid sequence to the identification of gel-separated proteins", Electrophoresis 17 :877-891		
	BO	Pawson, 1995, "Protein modules and signaling networks", Nature 373 :573-580		
	BP	Pham et al., 2000, "CNrasGEF, a PDZ- and cNMP binding domain-containing guanine nucleotide-exchange factor, activates Ras in response to cAMP and cGMP", Current Biology 10 :555-558		
	BQ	Pollack et al., 1999, "The human homologue of the yeast proteins Skb1 and Hsl7p interacts with Jak kinases and contains protein methyltransferase activity", J. Biol. Chem. 274 :31531-31542		
	BR	Pu et al., 1999, "pICln inhibits snRNP biogenesis by binding core spliceosomal proteins", Mol. Cell. Biol. 19 :4113-4120		
	BS	Schweighoffer et al., 1993, "Identification of a human guanine nucleotide-releasing factor (H-GRF55) specific for Ras proteins", Oncogene 8 :1477-1485		
	BT	Scott and Pawson, 2000, "Cell communication: the inside story", Sci. Am. 282 :72-79		
	BU	Shevchenko et al., 1997, "Rapid 'de novo' peptide sequencing by a combination of nanoelectrospray, isotopic labeling and a quadrupole/time-of-flight mass spectrometer", Rapid. Commun. Mass Spectrom. 11 :1015-1024		

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BV	Staub et al., 1996, "WW domains of Nedd4 bind to the proline-rich PY motifs in the epithelial Na ⁺ channel deleted in Liddle's syndrome", EMBO J. 15:2371-2380		
BW	Stone et al., 1991, "Construction and expression of linker insertion and site-directed mutants of the v-fps protein-tyrosine kinase", Methods Enzymol. 200:673-692		
BX	Tang and Tang, 1998, "The 30-kD domain of protein 4.1 mediates its binding to the carboxyl terminus of pICln, a protein involved in cellular volume regulation", Blood 92:1442-1447		
BY	Treisman, 1996, "Regulation of transcription by MAP kinase cascades", Curr. Op. Cell. Biol. 8:205-215		
BZ	Tung et al., 1997, "A 54 kDa protein related to Ras-GRF expressed in the exocrine pancreas. Cell Tiss. Res. 289:505-515		
CA	Verde et al., 1998, "Fission yeast orb6, a ser/thr protein kinase related to mammalian rho kinase and myotonic dystrophy kinase, is required for maintenance of cell polarity and coordinates cell morphogenesis with the cell cycle", Proc. Natl. Acad. Sci. USA 95:7526-7531		
CB	Wilkins et al., 1996, "Rapid protein identification using N-terminal "sequence tag" and amino acid analysis", Biochem. Biophys. Res. Commun. 221:609-613		
CC	Wilm et al., 1996, "Femtomole sequencing of proteins from polyacrylamide gels by nano- electrospray mass spectrometry", Nature 379:466-469		
CD	Yates et al., "Peptide sequencing by tandem mass spectrometry" <u>Cell Biology: A Laboratory Handbook</u> , vol. 4. (Academic Press, San Diego) pp. 529-538		
CE	Yates et al., 1995, "Method to correlate tandem mass spectra of modified peptides to amino acid sequences in the protein database", Anal. Chem. 67:1426-1436		
CF	de Hoog et al., 2000, "Calmodulin-independent coordination of Ras and extracellular signal-regulated kinase action by Ras-GRF2", Mol. Cell. Biol. 20:2727-2733		
CG	de Hoog et al., 2001, "Ras binding ubiquitination of the Ras exchange factor Ras-GRF2", Mol. Cell. Biol. 21:2107-2117		
CH	Fam et al., 1997, "Mapping of the Ras-GRF2 gene (GRF2) to mouse chromosome 13C3-D1 and human chromosome 5q13, near the Ras-GAP gene", Genomics 39:118-120		
CI	Yagi et al., 1994, "The UAS of the yeast GAPDH promoter consists of multiple general functional elements including RAP1 and GRF2 binding sites", J. Vet. Med. Sci. 56:235-244		
EXAMINER		DATE CONSIDERED	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			